Occasional Paper 31

# Growth, Poverty, and Human Development: Pakistan

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## 1. Development strategies, economic growth, and structural change

Over the past four decades, the development strategies adopted in Pakistan until recently emphasized the achievement of a high growth rate through an import-substituting industrialization strategy.

The industrialization drive was provided by a combination of instruments-i.e., regime of import and export controls and overvalued exchange rate, public procurement of foodgrains at prices below the market prices in order to maintain stable food prices and wages in urban areas and liberal tax concessions to industry, low level of direct taxation, and heavy indirect taxation. By the end of the first decade, the regional and sectoral imbalances created by this import substitution-led development strategy began to make themselves felt. However, with the infusion of substantial foreign aid, which financed from a half to two-thirds of total investment, the pace of industrial investment kept rising steadily. The expansion of industrial capacity, predominantly for manufactured consumer goods, was achieved not only at a high cost but also led to considerable excess capacity.

The real breakthrough in agriculture came during the 1960s with an increase in the availability of water, both through canal and tubewell irrigation, and the use of new seeds and fertilizers-all subsidized. This partly offset the discrimination against agriculture resulting from the particular industrial policies pursued. There was no doubt that a breakthrough in agriculture in the 1960s had a beneficial effect not only on rural employment in agriculture, at least in early stages, but also in agriculture-related nonfarm rural activities and urban industry.

However, there were two limitations. The first was in terms of coverage. The impact of the green revolution was confined mainly to the irrigated areas of Punjab, Sindh, and parts of NWFP. The rain-fed areas of Punjab and NWFP, and the northern hilly region and arid lands of Sindh and Balochistan, were left behind. The second limitation arose from the access to credit which was essential to the dissemination of this technology package, strengthened by considerable subsidies on agricultural inputs. This biased the use of the green revolution technology mainly in favor of the large farmers.

Thus, the strategy undertaken during the pre-1971 period was associated with a sharp rise in inequality in income distribution, both regional and functional.

The 1970s, recognized as the most turbulent years in the world economy, also brought with them a number of important policy changes. The decision to devalue the Pakistani rupee and to abolish the multiple exchange rate system in May 1972 affected the terms of trade between the industrial and the agriculture sectors.

At the same time, 32 large units of 10 major industrial groups were nationalized. Subsequently, banking and life insurance companies, shipping, oil distribution, vegetable oil and even grain milling and cotton ginning industries were nationalized. The size of the public sector grew further through an acceleration of investment in the new public-sector industries.

The economic policies introduced during this period included an attempt to introduce effective land reforms. These reforms were perceived to be more vigorous than those implemented a decade and a half earlier, although both were carried out under the umbrella of martial law. The earlier land reforms were particularly handicapped by poor implementation that greatly diluted their impact, often through fictitious land transfers and the resumption of tenanted land for self-cultivation.

Large-scale nationalization was associated with a fall in private investment; private investment in 1976/77 was 56 percent of the level achieved in 1969/70; however, total and public investment increased in longer-term projects partly as a result of a policy to encourage the development of heavy and defense industries. Overall economic performance saw a considerable slowing down of the GDP. Remittances from the out-migration of workers to the Middle East which started in the early 1970s and continued for about a decade, as well as large new capital inflows from the oil-rich Islamic countries helped financed investment. Also, the government pursued expansionary fiscal and monetary policies.

The effect of these policies on the distribution of income was not insignificant. The prices of agricultural goods steadily increased although the government was constrained in this effort by its desire to keep down the retail prices of foodgrains in the urban areas while subsidies on fertilizer and other inputs continued. They did not significantly help in improving income distribution.

During the decade beginning in 1977, despite the onset of world recession in the early 1980s, the economy was able to maintain a consistently high GDP growth rate. A large food deficit was turned into a modest food surplus. Growth was resumed during 1977/78, partly as a result of more favorable weather conditions, increased worker's remittances, renewed additional inflow of external resources, both direct and indirect, partly occasioned by the Afghan war. Private investment, however, remained depressed, and speculative and rent-seeking activities (including drug trafficking) greatly expanded. Denationalization of industries was effected only on a limited scale, and private investment was slow to revive.

With the change in government in July 1977, policies began to be gradually reversed, and the emphasis shifted back to the private sector. The new government privatized some

of the previously nationalized industries (flour mills, cotton ginning, rice mills, etc.). It also de-emphasized public investment in nationalized industries. Thus, by the time of the second oil price increase (1979), a gradual shift in economic policy was well under way. The effects of the second oil price increase on the current account balance and national income were largely mitigated by a rapid increase in net current private transfers from abroad.

Despite continued slack in the public sector, investment grew by over 9 percent a year, helped by the liberalization of a few industrial controls and incentives. At the same time, two pro-poor policies were introduced. First, more villages were electrified during the first five years starting 1977 than in the previous 30 years. Second, social safety nets for the poor were introduced through the introduction of Zakat and Ushr system.

Starting in 1984/85, attempts were made to deregulate private industrial activity, provide energy and physical infrastructure, and pay special attention to agriculture and rural development; and the provision of health, education, and other social services were made. During this period, the fruition of public-sector investments in "heavy" industries and a rapid expansion in domestic demand provided impetus to industrial growth. The rise in foreign resource inflows and illicit exports related to the war in Afghanistan and a growing fiscal deficit might also have contributed to high investment growth.

The period of 1988&shyp;93 expanded market-friendly policies. Economic reforms, mainly under structural adjustment packages of the World Bank and the International Monetary Fund (IMF), were introduced. The privatization policy was accelerated.

Following the first attempt at economic stabilization (from 1979/80 to 1981/82), fiscal policy became more lax. The consolidated fiscal deficit increased again and reached 8.5 percent of GDP in 1987/88. 1 A second stabilization attempt took place in 1988/89 to 1989/90, with support from the IMF's Structural Adjustment Facility. This second attempt did not yield lasting results, as the fiscal deficit first declined and then started to climb again. External reserves went down to very low level and severe short-term financing problem developed towards the end of 1990, leading to a large increase in short-term borrowing. The latest stabilization initiative started in 1993/94 with support from the IMF and the World Bank. The consolidated fiscal deficit was brought down from 8 percent in 1992/93 to 5.9 percent in 1993/94. The current account deficit declined from over 7 percent of GDP in 1992/93 to 3.5 percent in 1993/94. Gross international reserves have increased sharply.

During the decades starting 1959/60, Pakistan's GDP grew at rates varying between 6.78 percent (1959/60 to 1969/70), 4.67 percent (1969/70 to 1979/80), and 5.96 percent (1980/81 to 1991/92); thus the slowest rate achieved was during the decade of 1970s and the highest rate was achieved during the 1960s (Table 1.1). This was true, even if one considers shorter subperiods during these decades, indicating significant external developments and policy changes. Until the mid-1980s, the rate of growth of GNP was higher than that of GDP, particularly during the 1970s reflecting the income generated

from large remittances from abroad. Starting in the mid-1980s, the contribution of overseas remittances to the rate of growth of GNP significantly declined.

However, both GDP and GNP growth rates were very impressive compared to low-income developing countries in the world, particularly in South Asia. It was the very high rate of growth of the population in Pakistan which brought down the per capita GDP growth rate to modest levels. Even though the almost 4 percent per capita GNP growth rate during the 1960s (3.97) was an impressive performance, per capita growth rate in private consumption was also impressive ranging from 3.1 percent during the 1960s to 2.1 percent during the 1970s, and 1.3 percent during the 1980s.

Accompanying the economic growth was the changing economic structure. The share of agriculture in GDP fell from 46 percent in 1959/60 to 39 percent in 1969/70, 31 percent in 1979/80 to 23 percent by 1992/93. The share of manufacturing rose from 12 percent in 1959/60 to 16 percent in 1969/70, to 17 percent in 1979/80 (very little change in its share during the 1970s) and 21 percent in 1992/93. It was the share of other sectors, broadly defined as services (including transportation, communication, trade, and construction) that went up from 42 percent in 1959/60 to 45 percent in 1969/70, 52 percent in 1979/80, and 55.4 percent in 1992/93 (Table 1.2).

The investment-GDP ratio reached 18 percent in 1969/70 having increased from 14.5 percent in 1959/60-a ratio which has not been surpassed since then; this was financed almost 72 percent by domestic savings and 28 percent by external assistance. The average investment-GDP ratio was 16.7 percent in 1972&shyp;80 and 16.8 percent in 1980&shyp;85. During the years between 1986 and 1992, it was around 17 percent (Table 1.3). The national saving-GDP ratio increased significantly between 1959/60 and 1960/70 from 7.4 percent and 13.1 percent; it declined to an average of 10.9 percent during the period 1972&shyp;80 and recovered to an average of 14.6 percent during 1980&shyp;85. Since then, it fluctuated between 13.4 percent and 16.6 percent, the highest percentage reached in 1987 (Table 1.3).

Table 1.4 provides the government's development and total expenditures during the entire period from 1959/60 to 1991/92.

A distinctive feature of the 1970s was the high level of public development expenditure achieved, which accounted for 8&shyp;10 percent of GNP during 1975&shyp;79. The annual growth rate of public development expenditure during the period (1970&shyp;77) was 22.4 percent, compared to a decline of 1.3 percent and of 2 percent during the two subsequent periods, *viz.* 1978&shyp;82 and 1983&shyp;90. The upsurge in public development spending during the early to mid-1970s, primarily in the form of investment by public enterprises, was not met by the public sector generating the necessary revenue to close the fiscal gap thereby created.

Defense expenditures increased as a percentage of GNP from 5.85 percent in 1959/60 to 6.8 percent in 1971/72. After declining to 5 percent in 1979/80, it accelerated again and reached 7.3 percent by 1988/89. The rise in government expenditure also stemmed

from subsidies and debt servicing.

## 2. Trends in poverty

Poverty is multidimensional. One dimension refers to poverty based on the extent to which households or individuals in the population have actual levels of private consumption below a certain "poverty line", as representing a minimum acceptable standard of private consumption. Since the early 1970s, Pakistan seems to have made good progress in terms of reducing consumption poverty. But poverty also includes other dimensions. These relate to the extent to which a nation's population is free from malnutrition, premature mortality, a high disease burden, and illiteracy. These aspects of human development and their impact on nutritional health and educational status relate to the degree of access of the population to good quality basic health and education services.

### Income/Consumption-based Poverty and Income Growth

There have been a large number of studies on the measurement of poverty in Pakistan. They have frequently measured incidence of poverty for one or two, or at most three survey years. Moreover, they have used different definitions and methodologies, and have yielded results that are not strictly comparable. 2 A review of such studies (Table 2.1 and Graph 2.1) indicate that three studies showed an increase in rural poverty between 1963/64 to 1969/70, while three others showed a decline; all studies showed a decrease in urban poverty. At the same time, per capita income during the 1960s (1959/60 to 1969/70) rose by 3.9 percent per annum, but rural income distribution improved significantly from 0.348 in 1963/64 to 0.295 in 1969/70. Urban income distribution slightly deteriorated or remained constant. There were conflicting trends in movements in poverty and income distribution, i.e. an increase in poverty was associated with falling inequality and vice versa. During 1969/70 to 1971/72, of the two studies on urban poverty, one study indicated an increase while the other indicated no change. Of the three rural studies, two indicated an increase while one indicated a decline in rural poverty. During the period (1969/70 to 1971/72), per capita income growth slowed down to a much lower level compared to the 1960s; at the same time, inequality both rural and urban, increased but per capita income continued to increase even though at a slower rate than in the previous period, and decline in agricultural income was slightly faster than in manufacturing income. Between 1978/79 and 1984/85, two additional studies indicated that poverty, both rural and urban, declined while per capita income grew at rates significantly above the previous period, faster in the manufacturing sector than in the agricultural sector, and at the same time income distribution worsened in the rural areas and remained unchanged in the urban areas (the latter figures belong to the 1979/80 and 1984/85 periods).

Thus, these earlier studies covering the period from the 1960s to 1971/72 indicated conflicting trends in poverty, both urban and rural, in Pakistan. There was no general trend to declines in poverty during this period, even though a few studies did show such a decline. However, from 1969/70 until 1984/85, most studies show a decline in poverty,

both rural and urban. The quality of data on income distribution leaves much to be desired; in addition to the aforementioned problems, there is limited comparability of studies on poverty.

An interesting feature of the income distribution in Pakistan is that urban inequality is generally higher than rural income inequality. However, the movements over time in the Gini coefficient in the two areas have not been uniform. While rural income distribution improved markedly between 1963/64 to 1969/70, the urban income distribution did not improve much during the same period. The decline in the urban Gini coefficient was much more moderate and it increased during 1963/64 to 1966/67 3 (Table 2.2).

Since 1970/71, the movements in rural and urban income inequalities have, however, been broadly similar. The Gini coefficients for both areas rose between 1970/71 and 1984/85 (from 0.273 to 0.345 and from 0.359 to 0.379, respectively) and the differences between the two narrowed significantly. Between 1984/85 and 1987/88, both rural and urban inequalities were reduced. However, the inequality during 1987/88 to 1990/91 again increased sharply, both overall and sectorally. The rise in rural inequality, however, was sharper, rising from 0.307 to 0.410 and exceeding the urban inequality ratio of 0.39.

One can hypothesize several reasons for changes in income distribution in the rural areas over time. However, it is very difficult to be certain about the degree to which these factors have contributed to changes in income distribution over time. During 1963/64 to 1970/71, one reason for the decline in rural income inequalities might be attributed to the green revolution, which was generally scale-neutral in its initial period. In the period 1970/71 to 1984/85, the rise in rural income inequalities could be due to adverse changes in agrarian structure arising from the resumption of self-cultivation by landlords and the increasing mechanization of agriculture in the wake of ineffective land reforms. The increase in inequality in the period 1987/88 to 1990/91 could be traced to the structural adjustment programs which included a more realistic exchange rate and higher output prices for major crops that tended to benefit the larger farmers. The poorer sections in the rural areas could, on the other hand, have suffered because of increasing prices of food and other basic necessities, as well as by continuing mechanization of agriculture.

The changes in urban income distribution indicated a different pattern. There were significant increases in urban inequality during 1963/64 to 1966/67 when rural inequality declined. Thereafter until 1970/71, there was a decline in urban inequality in line with declining rural inequality, but year-to-year changes between 1971/72 and 1984/85 were very small, after having jumped between 1970/71 and 1971/72. This rise in urban inequality between 1984/85 and 1990/91 in the urban areas can be attributed to the structural adjustment programs.

Given the weakness in the sample data and the widely varying definitions of poverty, in terms of definition of "cut-off" point in the headcount of poverty employed by different authors, it is difficult to consider the empirical evidence on both income distribution and poverty incidence as being very precise. Rather, they should be seen as reflecting indicative trends, to be considered in conjunction with those of other economic

variables such as GDP and the sectoral growth rates in real wages that are more easily measurable and available with relatively greater ease. However, a more comprehensive explanation of divergent trends in income distribution poverty and economic growth in various periods continues to remain a challenging task.

Declining poverty during the 1970s was supported by the available data on real wages. The wages of unskilled urban construction workers, available since 1974/75, indicate an annual average rate of increase in real terms of 1.1-2.0 percent, depending on location. Wages of unskilled agricultural workers were collected by the Federal Bureau of Statistics since 1983/84. For Punjab, which contains over 60 percent of the rural population in the country, these series show an annual average rate of increase in real terms of 3 percent for regular workers and 2.1 percent for casual workers in the period 1983/84 to 1993/94. An older wage series collected by the Punjab Economic Research Institute, discontinued in 1991/92, shows an average annual rate of increase in real terms of 3.7 percent for regular ("permanent hired") rural workers from 1974/75 to 1991/92, and an even higher rate of increase for casual rural workers (Table 2.3).

Beginning in the mid-1980s, a different set of more consistent and comprehensive studies on poverty have been available. They are not comparable with earlier studies for the 1980s. A detailed analysis of trends in poverty incidence and depth was conducted using data from the House Income Expenditure Surveys (HIES) of 1984/85, 1987/88, and 1990/91 (World Bank 1995). The results are reported in Table 2.4. Based on the reference poverty line chosen in this report, the nationwide *headcount ratio* or incidence of poverty (i.e., the percentage of individuals in the total population with consumption expenditure below the poverty line) fell from 46.0 percent in 1984/85 to 37.4 percent in 1987/88 and further to 34.0 percent in 1990/91. The *poverty gap* also fell, indicating a substantial decline in the depth of poverty. The incidence of poverty fell slightly faster in urban than in rural areas. In absolute terms, the number of poor people declined sharply from about 43.6 million in 1984/85 to 38.8 million in 1987/88, but fell only slightly more (to about 38.7 million) between 1987/88 and 1990/91.

The *reference poverty line* used in this report is equal to Rs 296 per capita consumption expenditure per month, in 1991/92 rural prices (Rs 334 in urban prices). This poverty line was based on the costing of a basic needs basket of goods and services. Other recent works have used nationwide reference poverty lines which are about 10&shyp;20 percent lower than the one used in this report, thus yielding lower estimates of poverty incidence (Sohail 1994).

Because conclusions about poverty trends can vary depending on the specific poverty line used, it is important to conduct sensitivity analysis using a range of alternative poverty lines. This was done for a wide range of values of per equivalent adult monthly consumption expenditure (from about 40 percent to about 175 percent of the reference poverty line), spanning the range of all conceivable poverty lines (World Bank 1995). The fall in poverty from 1984/85 and 1987/88 was evident wherever the poverty line was set within the range. But the finding of a fall from 1987/88 to 1990/91 was not as robust. The lower the poverty line is, the less the difference between the headcount ratios of

these two years. From about Rs 300 downwards (or from Rs 260 in per capita terms), the two curves were statistically undistinguishable. Thus, one can say that poverty in the 1987/88 to 1990/91 period either fell or remained approximately constant, depending on whether the poverty line was drawn above Rs 300 per month in adult equivalent terms (Rs 260 in per capita terms) or below this figure, respectively (World Bank 1995).

**Trends in Poverty After 1990/91**

Assessing trends in poverty after 1990/91 is difficult because no data on the distribution of household consumption (or income) are available at this time. In the three-year period from 1990/91 to 1993/94, the annual rate of increase of private per capita consumption in real terms was about 3 percent according to the national accounts. If the household distribution of consumption had remained unchanged after 1990/91, growth of private per capita consumption at this rate would have resulted in a decline in poverty (as per the previous reference poverty line). Poverty incidence could have declined quite a bit, because in 1990/91 there were many households below but in the vicinity of the poverty line. The limited data available on wages of unskilled workers suggest that these wages may have increased somewhat, in real terms but not significantly, after 1990/91; in fact, wages of unskilled construction workers in Karachi appear to have declined (World Bank 1995). However, it is difficult to hypothesize that income distribution since 1990/91 remained unchanged.

The geographic disaggregation of consumption poverty estimates is constrained by the relatively small sample size and design of existing household surveys. Disaggregation is possible at the provincial level, and for urban and rural areas within each province for 1990/91 and 1991. It is also possible to disaggregate the estimates for rural Punjab, which account for well over half of all rural observations, into "south" and "north". The relevant estimates of poverty incidence based on the reference poverty line are presented in Table 2.5 from the two most recent surveys namely, the HIES 1990/91 and the Pakistan Integrated Household Surveys (PIHS) 1991 (World Bank 1995).

Nationwide, the estimates of poverty incidence from the HIES and the PIHS are close (34 percent and 31.6 percent, respectively), and they show higher poverty in rural areas, although the difference is less for PIHS estimates.4 About 74 percent of the poor live in rural areas. Punjab as a whole has considerably more poverty than Sindh. Rural South Punjab has an extremely high incidence of poverty of close to 50 percent. This is much higher than the incidence of poverty in rural North Punjab (26&shyp;32 percent), and in rural Sindh as well (31&shyp;36 percent). 5 Depending on the survey used, the incidence of poverty in rural North Punjab is either about the same (HIES) or much lower (PIHS) than the incidence of poverty in rural Sindh.

Estimates for the two smaller provinces show large inconsistencies between the two sources. The HIES shows NWFP as being poorer than the national average with 40 percent poverty incidence, while the PIHS yields an estimate of just 20 percent. The reverse is true for Balochistan, with the HIES showing a very low poverty incidence of 22 percent, while the PIHS yields an estimate of 41 percent. Further research is needed to

ascertain the poverty rankings of these provinces between themselves and relative to the other provinces.

In another study (Naseem et al. 1995), estimates of poverty (rural and urban) have been made for Pakistan as a whole and for various provinces. These estimates are based on different poverty lines for the years 1984/85, 1987/88, and 1990/91. 6 Because of a lower poverty line, the percentage of poor people is much lower than in the World Bank estimation. Also, changes in the incidence of poverty over time are different between the two sets of estimates. In the World Bank estimates, there is a consistent decline in the incidence of poverty for Pakistan as a whole between 1984/85 and 1990/91. In the Naseem et al. study, there is a decline in the incidence of poverty between 1984/85 and 1987/88, following a similar trend as in the World Bank study; but between 1987/88 and 1990/91, decline continues until 1990/91 according to the World Bank, whereas in the Naseem et al. study, there is an increase in the incidence of poverty between 1987/88 and 1990/91 (Table 2.6).

As between regions, there are also differences in the movement over time in the incidence of poverty. While it declined consistently in Punjab and Balochistan, there is an increase in the incidence of poverty over time in two other provinces. This is true not only for all overall poverty indexes, but also for the rural and urban areas separately.

**Characteristics of the Poor**

An attempt is made in Table 2.7 to relate the incidence of poverty to the employment profile as well as to an asset profile of the households. All households are classified into four broad categories: agricultural, wage earners outside agriculture, self-employed outside agriculture, and a residual "other". Agricultural households were further classified by their access to land: owner cultivators, tenants, and agricultural laborers. Nonagricultural wage earners were classified into "white collar," skilled/semi-skilled, and casual/manual workers. White collar workers were mainly employed in regular and secure jobs in the formal sector. The skilled/semi-skilled category included production workers and tradesmen such as plumbers and electricians. Casual/manual workers were involved in largely unskilled and casual laboring jobs with low rates of pay and insecure employment. The self-employed were classified by the asset value of their enterprises.

Poverty headcounts correspond well with level of asset holdings within both the wage-earner and self-employed groups. White collar workers have the lowest incidence of poverty (22.1 percent) among the wage earners, which is very close to that of the self-employed with assets worth Rs 10,000 or more. The skilled/semi-skilled workers have a higher incidence (28.1 percent), and casual/manual laborers higher still (38.3 percent). The self-employed are an even more diverse category, within which ownership of capital appears to make all the difference, though there are probably other correlated factors at work including human capital. Those with assets valued at under Rs 1,000 had the highest incidence of poverty among all groups (51.2 percent). This group, which comprises about 9 percent of the urban sample, are worse off than even casual laborers.

The results indicate the importance of both human and physical capital in determining the incidence of poverty.

In the rural sample, 64 percent of the households are classified as agriculturists, with owner cultivators as the largest group (36.6 percent). Tenants, with 13.6 percent of the rural sample, have a high incidence (43.8 percent). Agricultural laborers, who constituted 7 percent of the rural sample, were even worse off. Among the nonagricultural rural households, casual workers have the highest incidence (45.1 percent) as do self-employed with less than Rs 1,000 in assets (46.3 percent). The incidence of poverty among wage earner and self-employed households is remarkably similar in urban and rural areas.

## 3. Agricultural growth and rural poverty in Pakistan

### Introduction

The pace and pattern of growth in agriculture has important implications for rural poverty. Nearly two-thirds of households in rural areas were employed in agriculture and they accounted for 6.5 percent of the rural poor. Among the households engaged in agriculture, 35.1 percent were below the poverty line in 1991. The evidence of poverty was most severe among the agricultural landless (56 percent below the poverty line), worse than the casual/manual workers in rural nonagricultural occupations, among whom incidence of poverty was only 45.1 percent, about the same as the rural self-employed in nonagricultural occupations with assets below Rs 1,000 or less. 7

Agricultural growth through intersectoral linkages stimulates growth in both rural nonfarm and urban industrial sector as it generates a large proportion of gross domestic product and an even larger share of employment. The growth in nonagricultural employment is linked to the growth in income in agriculture as the latter stimulates demand for output and labor in the nonagricultural sector.8

Growth in Pakistan's agriculture has been impressive, at about 3.6 percent per year in the last two decades or more. However, could the past rate of growth lead to a faster reduction of poverty-faster than the decline that has actually occurred? Could a different set of institutional and policy frameworks lead to a faster pace of poverty reduction?

The growth momentum generated by the green revolution technology was superimposed on rural agrarian structure and a land distribution system which conferred a disproportionate share of the benefits of growth on the large farmers.

The two salient features of Pakistan's agrarian structure were a high degree of concentration of owned area and a very high incidence of share tenancy. These initial characteristics had very important implications for the past patterns of growth and change in the land distribution.

The government's attempt at land reform and an absence of an efficient land registration market have made the functioning of a rural land market difficult. Small farmers are more efficient at employing labor per acre than large ones. But land remains quite unequally distributed, and the absence of a well-functioning land market prevents the transfer of land from the large to the small.

Land redistribution can increase absorption of labor in agriculture. As small farms use labor more intensively than large ones, resuming land from large owners and transferring to small can improve the overall absorption of labor in agriculture. Typically, land reform by edict does redistribute land, but it also creates an uncertainty about private property rights. The threat of reform may drive large owners to expel tenants, who were likely to become beneficiaries. Such land owners may choose to self-cultivate with the help of labor displacing agricultural machinery (LDAM). In such cases, if the amount of redistributed land is not significant, the labor-enhancing effects of redistribution can be dominated by the inhibiting effects of tenant eviction and labor displacement.

The 1959 reforms set the ownership ceiling at 500 acres irrigated and 1,000 acres unirrigated. The 1972 reforms further lowered the ceilings to 150 acres and 300 acres, respectively. The 1977 reforms were to reduce the 1972 ceilings by another 50 percent, but these reforms were not implemented because of the overthrow of the government. In practice, the reforms have not been very effective in redistributing land to tenants and landless. Overall, only 1.8 million hectares or 8 percent of cultivated area was resumed, and 1.4 million was actually redistributed. As far as implementation was concerned, the 1959 reform was more effective than the 1972 one, with about two-thirds of the resumed area redistributed under the earlier reform (Khan 1994).

In addition to redistributing land, the 1972 reform also attempted to reform the tenancy system in agriculture by discouraging absentee landlords from sharecropping out their land. First, the tenants of the landlord from whom land was resumed were given the highest priority in redistribution. Second, existing tenants were granted security of tenure by prohibiting evictions. Last, a 50&shyp;50 split in share tenancy arrangements was mandated for the output, and landlords were prohibited from levying any excess on or taking free labor from the tenants (Herring 1983).

The evidence seems to suggest that tenancy reform was largely on paper and, while landowners may not have directly evicted their tenants, they may have made the situation unbearable for tenants to continue (Herring 1983). On the other hand, Hussain and his colleagues (1992) note that the reforms appear to have had a greater impact in Punjab than in Sindh. Landlords in Punjab were forced to award ownership rights to occupancy tenants. In Sindh, on the other hand, feudal power has been deeply entrenched and implementation of the reforms has been weak. This has tended to create a greater perceived threat among Punjabi landlords of another reform in the future.9 This perceived threat resulted in the evictions of tenants more in Punjab than in Sindh. As a consequence, share tenancy has been almost completely eliminated from northern Punjab and is limited to 20 to 30 percent of area in other parts of the province. In Punjab,

landlords have tended to increase self-cultivation of land. In Sindh, however, tenancy still persists in about 70 percent of cropped area (Hussain et al. 1992).

Faced with a strong policy bias of land reform legislation against share tenancy, the landlords could either self-cultivate or let the land out on fixed rent. While the green revolution technology raised per acre returns, it also increased the outlays needed for the purchase of irrigation water, seeds, and fertilizer. With severe credit constraints in the rural areas, the landless and small holders were unable to enter the area taken on fixed rent. The large holders could cash in on the high gains promised by high-yielding variety package through self-cultivation. The supervision constraints gave rise to the institution of sharecropping in the first place (Mahmood 1994); thus the managerial constraint of supervising a large labor force, especially on the larger farms, drove large holders to substitute labor for tractors. At the same time, rural labors (especially in the Punjab) saw a growth in employment opportunities both overseas and domestically in the nonfarm sector. The consequent tightening of labor market provided landowners with an incentive to mechanize. Punjab enjoyed a better infrastructure and marketing system; it made self-cultivation less risky; and in Sindh which has an inferior infrastructure, on the other hand, old tenancy arrangements persist.

Tenancy reform does not seem to have arrested the eviction of tenants that started in the mid-1960s as a result of adoption of high-yielding variety seeds. In fact, the expectation of further pro-tenant legislation tended to landowners to evict tenants. [10] [11] , Table 3.1 shows that both number of farms and area owned in the tenant category declined between 1972 and 1980, and between 1980 and 1990.

Moreover, the adoption of the HYV package was widespread, albeit with some lags for poorer farmers across size, class and tenure in the irrigated area. This generalized increase in yields, however, created a large profit differential between owner-operated and share-cropped areas, since profits had to be shared between landlords and tenants on approximately 50&shyp;50 basis. This profit differential between tenanted and owned land worked as a strong incentive for landlords to resume their rented-out area for self-cultivation by evicting the tenants.

Naseem (1982) and Hussain (1980) analyzed the period between 1960 and 1972 and found a disturbing increase in landlessness and concentration of operated area. It needs to be pointed out that the comparability of the first two censuses (1960 and 1972) is difficult, since the 1960 census was the only archivally-based census, while since 1972 they have been based on sample surveys. The data, however, showed that there had been a polarization of area at the ends of the size scale, with a depletion in the middle. The concentration of operated area has increased over both periods, 1960&shyp;70 and 1970&shyp;80.

Graph 1 shows the size distributions for 1960, 1972, 1980, and 1990 in four dimensions. It also gives the tenancy distributions for 1960, 1972, and 1980. The horizontal axis gives the six size classes. The vertical axis measures the percentage area of each size class from the total operated area. The Z axis which gives depth to the figure

marks the four years, 1960, 1972, 1980, and 1990. These three dimensions give the size distribution for 1960, 1972, 1980, and 1990. There are six sets of four joined blocks each, in the figure. Each joined set denotes a size class from <5 acres to >150 acres. Within each joined set, there are four blocks denoting the four years, 1960, 1972, 1980, and 1990. So each joined set of four blocks shows the proportional area of a particular farm size in 1960, 1972, 1980, and 1990. The height of each block indicates the proportional area of that farm size in that year. For instance, the first set of blocks at the origin show that the <5 acre size class operated 3 percent of the total area in 1960. This size class increased to operate 5 percent of total area in 1972. It increased further to operate 7 percent of the total area in 1980.

The graph enables us to observe the changes in size and tenurial distribution over time simultaneously for the period from 1960 to 1980. All size classes operating 12.5 acres or more lost area between 1960 and 1980. Size classes operating less than 12.5 acres gained this area over time. There is a qualitative difference in this change between the 1960s and the 1970s, as compared to the later decades. Between 1960 and 1972, the two middle-size classes between 12.5 and 50 acres did not lose net area to the smaller classes. It was the two large-size classes above 50 acres that lost net area to the small-size classes under 12.5 acres. So while inequality of operated area increased between 1960 and 1972, it was minimal.

Between 1972 and 1980, the two middle-size classes between 12.5 and 50 acres lost net area, while the large-size classes above 50 acres did not lose net area. So large farm sizes remained constant between 1972 and 1980, and small farm sizes below 12.5 acres gained net area. Therefore, between 1972 and 1980, inequality of operated area increased significantly.

Against this background, the most recent data on changes between 1980 and 1990 make an interesting comparison. The middle-size classes between 12.5 and 150 acres lost their area. But this loss was not necessarily to the smallest size classes. The size classes below 12.5 acres gained area. But the largest size class above 150 acres also gained area. It is this gain by the largest size class over the 1980s, compared to its loss over the 1960s or its constancy over the 1970s, that has lead to the largest increase in concentration.

The major tenurial change between 1960 and 1980 is a reduction in tenant's proportional area in each farm size and an increase in that of owners. Between 1960 and 1972, tenants in each size class lost area, while owner *cum* tenants gained. Between 1972 and 1980, all tenants and owner *cum* tenants lost area. Pure tenants' area decreased in proportion from 43 percent in 1960 to 29 percent in 1972 to 22 percent in 1980, and finally to 16 percent in 1990. The total number of tenants decreased from 44 percent of the operators in 1960 to 35 percent in 1972 to 26 percent in 1980, and finally to 19 percent in 1990. In other words, the proportional number of tenants more than halved by 1990, while their proportional area virtually dropped to a third by 1990. So the concentration of operated area between 1960, 1972, and 1980 is explained by tenants falling out of the distribution and their area being resumed by the owners. By 1991, less than 1 percent of the largest farms (greater than 150 acres) covered 10 percent of farm

area. At the other end of the distribution, about one half of all farms in the country are less than 5 acres but they occupy only 11 percent of the farm area (Table 3.2).

The creation of large farms was partly fostered by government policies that tended to increase the profitability of such farms, such as credit and irrigation subsidies, and preferential income tax treatment to agriculture.12

The onset of the green revolution saw a phenomenal increase in the adoption of two types of labor substituting agricultural machinery: tractors and threshers. By late 1970s, the rate of adoption of tractors was about five-fold greater than in the early years. Over the 20-year period (early 1970s to early 1990s), the population of tractors in the country increased ten-fold. An alternative measure of the degree of pervasiveness of agricultural machinery is the number of farms reporting use. The proportion of farms using tractors more than doubled between 1970 and 1980. By 1990, eighty-two percent of the farms reported using tractors. Threshers show an even more phenomenal increase; between 1980 and 1990, the proportion of farms reporting thresher use rose from about one-sixth to more than two-thirds.

Ownership of farm machinery is unequally distributed. Table 3.3 shows that the ownership pattern of tractors and threshers in 1990 was highly skewed, with less than 1 percent of the farms smaller than 1 acre owning tractors or threshers.

The rapid mechanization of Pakistani agriculture has come at a time of decreasing labor intensity in the sector. Employment in agriculture increased by 50 percent between 1970/71 and 1993/94 (see Table 3.4). 13 However, value added in agriculture rose much more rapidly, by 300 percent. As a result, the ratio of employment to value added, which is an indicator of the labor absorptive capacity of agriculture, declined over the period to one-half its value. The decline has been monotonic over the 23-year period, except for two years (1984 and 1993). The ratio shows a slight increase in these two years, because of a failure of the cotton and wheat crop in 1984 and of the cotton crop in 1993. Employment in these two years did not fall proportionately as would be with respect to value added for two distinct periods, 1971/72 to 1978/79 and 1978/79 to 1984/85.

In fact, one study of trends over time indicates that rapid mechanization appears to have neutralized to a large extent the beneficial impacts of increases in cropping intensities, irrigated area, high-yield varieties, and fertilizer (World Bank 1995). In Pakistan, agricultural wages have seen an increasing trend over the last 25 years. At the same time, tractors have been subsidized. Thus, the relative price of capital to labor has been falling.

Real wages show a steadily increasing trend since the early 1970s (Table 3.5). Because of a general trend toward tenant eviction and casualization of the labor force during 1960s and early 1970s, the demand for permanent hired labor fell, while that for casual and family help rose. There was a drop in the number of permanent hired workers from 512,000 in 1972 to 387,000 in 1980 and there was also an increase in the participation of family and casual workers (Irfan 1990). Table 3.5 confirms that demand for casual

workers rose while that for permanent help stagnated. The wages of permanent workers experienced a decline in real terms up to 1980 period.14 One implication of the transformation in the labor market was that agricultural work ceased to be the dominant activity of rural labor. Demand for casual labor tends to be seasonal. During off-season, the casual workers tended to work in the nonfarm sector.

Both demand and supply factors affected the rural labor market in the period between 1975 and 1983. There was rapid agricultural growth as well as a take-off of emigration overseas. As a result, there was a general tightening of the rural labor market due to both supply and demand factors.

The period that followed (1984_1992) was also one of a slowdown in emigration and an increase in return migration. But real farm wages continued to show an upward trend. On the supply side, even though net emigration slowed down, with an increase in return migration, there was a shift in the occupational behavior of return migrants. Return migrants prefer self-employment over farm work, and this prevented the ranks of rural wage labor force from swelling up (Kazi 1989; Ilahi 1993). Another impact of migration on farm wages came from the way remittances were utilized. Remittances were channeled as investments into the rural nonfarm sector which increased the demand for labor in that sector and dampened the supply in the farm sector.

Government policies also played a part in the mechanization of agriculture. Targeted and concessionary credit tended to artificially lower the price of machinery. The exchange rate policies in the 1970s and early 1980s tended to overvalue the real exchange rate, which also lowered the price of tractor kits artificially. However, exchange rate reform in the early 1980s lowered the overvaluation to a point today where the nominal exchange rate is close to the real rate.

While the aforementioned government policies tended to artificially lower the price of Labor Displacing Agricultural Machinery (LDAM), trade and taxation policies distorted the price of machinery in the contrary direction. Local assemblers have enjoyed tariff and nontariff protection, which resulted in raising domestic purchase price of LDAM over international levels. However, the new Awami Tractor Scheme (ATS) has greatly reduced trade distortions for tractors, while those for threshers persisted.

Overall, the ATS has significantly reduced the protection granted to domestic assemblers and succeeded in bringing down the farmgate price of tractors closer to international levels. The protection granted to threshers and combine harvesters has also seen a declining trend in the 1990s, though this decline has not been as drastic as that for tractors.

The ADBP is the primary lender for agricultural machinery, accounting for 93 percent of such lending in 1991/92. While ADBP's role in financing tractors has been significant since its inception, the 1980s have seen it almost completely dominating the lending for machinery.

About 70 percent of the tractors adopted in Pakistan since the heydays of the green revolution (circa 1966/67) have been financed by ADBP. The rate of tractorization in Pakistan peaked in the mid-1980s and declined somewhat since then. The average share of ADBP in total tractorization between 1984/85 and 1992/93 has been 87 percent.15 In 1992/93, all the tractors purchased by farmers were financed by ADBP. Both interest concessions and noninterest concessions in the form of lowering of down payment, a discount on price, paid by ADBP, and extension of repayment period of tractor loans have been responsible for the dominant role of ADBP in tractorization in Pakistan.

Targeted agricultural credit has largely gone to large farmers. Large farmers employ less labor per acre than do small ones. In the absence of a rental market for tractors, targeting credit subsidies to large farmers could have catastrophic effects on employment. The rental market for tractors is quite active. Thus, the labor displacing impact of targeted credit to large farmers is dissipated.

According to ADBP data, large sum loans (greater than Rs 100,000) account for about 62 percent of total ADBP lending (see Table 3.6). The distribution of loan amount by farm size reveals that about 34 percent of ADBP credit flows to landowners with holdings in excess of 50 acres. ADBP credit for machinery also flows more than proportionately to large farmers. For large farmers (those with holdings in excess of 50 acres), 38 percent of the finances for the purchase of tractors come from ADBP alone, with other formal institutions accounting for another 3 percent. In contrast, those with holdings less than 12.5 acres are able to raise only 24 percent from ADBP (World Bank 1995).

Commercial banks have not fared any better in providing credit to smaller farmers, though they claim to have channeled a sizable share of their disbursement to small farmers. According to commercial bank data, those with land in excess of 50 acres received only 15 percent of commercial bank credit to agriculture in 1991/92, while subsistence farmers got 61 percent. However, the prevalence of proxy loans, family loans, and loans taken in the name of tenants but used by landlords result in large farmers obtaining a larger *de facto* share of production loans than is prescribed by law and shown in the banks' books (Qureshi 1993).

Cooperative societies have also fallen short of meeting government objectives of providing credit to the small farmer (Qureshi 1993). Corruption and incompetence have been the primary reasons for denying access of cooperative credit to small farmers. In 1986, about one-third of the societies were family-owned and these had appropriated the bulk of cooperative credit.

In 1985, barely one-quarter of the institutional credit went to farms of less than 15 acres; there was a worsening from 1973 when 31 percent of credit went to this category. There was a slight improvement in the number of small farmers with access to institutional credit between 1973 and 1985, but large farmers did appreciably better, resulting in a worsening in the access distribution of farm credit (Table 3.7). Thus, on the one whole, trade and taxation policies have tended to raise the domestic prices of tractors

over international levels. Credit policies, on the other hand, have worked in the opposite direction; they have tended to lower the farm price of tractors.

Over the years, the Government of Pakistan has used a wide variety of interventions to influence agricultural output and input prices, both at the level of users/consumers as well as producers. They include such output price intervention, procurement/support prices for selected agricultural/food commodities, consumers' subsidies to food prices through rationing on public food distribution system, and export or import taxes on exportables/importables. In addition, subsidies have been provided to fertilizers, water, and credit, etc. 16

A debated issue has been whether the agricultural sector as a result of these output and input price interventions, on the one hand, and overvaluation of exchange rate and industrial protection, on the other, have transferred resources on a net basis to the rest of the economy and if so what is the magnitude. Various estimates have been presented regarding the intersectoral resource flow. These estimates vary widely due to the differences in the definition and methodology of estimating the resource flow. During 1960&shyp;70, there was a net direct (excluding the effect of overvaluation of exchange and industrial protection and including only the price controls, output taxation, and input subsidies) transfer into the agricultural sector rather than out of it; thus direct transfer to the agricultural sector did not exceed 2 percent of GDP in any year, which, however, turned negative, constituting a transfer out of agriculture to the extent of between 3&shyp;4 percent of GDP when the total effect, including that of exchange rate and industrial protection, was taken into account. During the 1970s and 1980s, direct transfer out of agriculture varied between 2 percent and 7 percent. The total of direct and indirect transfers ranged between 3 percent and 12 percent of GDP. The total transfer was always out of agriculture and never to the agriculture. 17 These transfers during the 1970s and 1980s constituted a much larger proportion of agricultural value added, i.e. between 7 percent and 36 percent of value added in agriculture. However, it is important to consider the offsetting expenditures by the government on the agricultural sector in excess of revenues directly collected from agriculture, on such items as investment, rent and extension, etc. In fact, during the second half of the 1960s, for a brief period, the government expenditures on agriculture more than compensated for price-related transfers. There was a small net inflow (total of direct and indirect) into agriculture. However, these transfers were quickly reversed. By the late 1980s, there was a decline in net transfers out of agriculture; by 1987 it came down to less than 1 percent of GDP, partly as a result of government policies to improve incentives for agriculture and partly due to a fall in world prices.

Recent estimates of resource transfer for the 1990s have not been as comprehensive as was done for the previous decades. One estimate for 1992/93 puts the net transfer out of agriculture-based only on five major crops, including input and output price interventions and government revenues from and expenditures on these crops (but excluding effect on exchange rate overvaluation) at 6 percent of agricultural gross product. However, this does not include capital costs of irrigation, loan defaults, and subsidy on agricultural loans (World Bank 1994, p. 45). This method of transferring resources out of agriculture

by depressing output price below parity prices and then subsidizing inputs is both inefficient and inequitable. It depresses agricultural output, misallocates resources within agriculture as well as between agricultural and nonagricultural sectors compared to a situation in which transfers are made by direct taxation on agricultural income.

The adverse income distributional effects of the mechanism of resource transfer are apparent from the fact that both benefits of price and subsidy policies are likely to accrue more time to the large farmers with higher output and greater power to capture the benefits of subsidized loans and inputs. The resource transfer, whenever it occurs, is likely to fall more on the poor than on the rich. A recent study found that the net contributors to these outflows have tended to be farmers in especially poor rural areas such as Southern Punjab. Net recipients, on the other hand, have included mostly people living in the urban areas and relatively richer zones (Ali and de Kruijk 1994).

Rapid growth of population has constrained the growth of per capita income on the one hand and led to the problems of unemployment and underemployment on the other.

While the gross national product in Pakistan during the last two decades has increased at the rate of 5.5 percent, per capita income has grown at a rate of only 2.4 percent. Because of a continued growth of population at a high rate, the labor force has grown at a rate of 2.6 percent over the 1963/64 to 1990/91 period. 18 A slower growth of labor force than that of the population reflects the falling labor force participation rate: the labor force participate rate (crude activity rate) has fallen from 32.6 percent in 1963/64 to 28.83 percent in 1990/91. Employment has increased at the rate of 2.5 percent over the same period, leaving the unemployment rate to vary in the narrow band of 3 to 4 percent. It seems that labor market adjustments in Pakistan take place via adjustments in the labor force participation rates rather than in the unemployment rates. 19 The elasticities of employment vary quite significantly not only across economic activities but also over time (Table 3.10). The lowest employment elasticities have been observed in case of the manufacturing sector.

The process of polarization in the size distribution of farms was likely to have affected farm labor demand. Labor requirements on different size classes of farms have differing proportions of hired labor, because of differences in production organization. Thus, for example, small farms fulfill a lower proportion of their labor requirement with hired labor compared to medium-sized farms due to a relatively greater propensity of small farmers to use family labor. On the other hand, large farms, while they use virtually no family labor, have a greater propensity to replace human labor with machines over time in an attempt to establish greater control over the production process and reduce risk. An important reason for labor displacing mechanization on large farms is that with multiple cropping, there has been both an increase in the frequency of peak season demand for labor as well as a constriction in the time period available for performing labor operations at peak season. It appears then that, given the propensity of the small farmers to use the family labor rather than the hired labor and given the tendency of the large farmer to adopt labor displacing mechanization, a polarization in the size distribution of farms is likely to dampen the growth rate in the demand for hired labor.

In a survey of the homeless population of a city, it was discovered that of the rural migrants who had moved into Lahore less than two years ago, a much larger proportion were landless laborers, compared to those who had migrated to Lahore city over 10 years ago (Hussain 1991). In the absence of a major policy intervention, there is, of course, a trend towards concentration of the growing population in large cities. One possible way to generate more employment opportunities is to promote informal sector and to create off-farm employment opportunities. No doubt small-scale activities in the unorganized sector and export-oriented industries are expected to generate more employment than similar activities at the large scale. However, this employment potential may not be realized because, firstly, domestic demand for goods produced by small-scale manufacturing sector is weak; and secondly, export prospects of the small producers are limited because there are limited interlinkages with large-scale producers. Accordingly, policy measures need to be instituted for generating adequate demand, both domestic and external, for the goods produced in the informal sector. Although comprehensive data on the dimension of growth of the nonfarm sector and its impact on the rural economy were not available, there was some evidence from microdata to suggest that nonfarm income did contribute more to household income than agricultural incomes, especially in the lower income groups and among the landless and smaller farmers. The rural nonfarm sector in Pakistan is heterogeneous in character ranging from small-scale looms industry to artisanal work.

An increasing labor force in the rural areas, not fully absorbed in agriculture, sought employment in the low productivity and labor-intensive rural industries that had few linkages with the large-scale industrial sector. Despite weak linkages in the economy and the lack of dynamism in the rural nonfarm sector, scattered evidence based on village-level study indicated that the latter provided an important source for poverty alleviation in the rural areas of Pakistan.

The informal sector, both in the urban and rural areas, while providing substantial support to the poor as a means of augmenting their incomes, suffered from serious handicaps. A survey of Nadvi 20 showed that the vast majority of the small-scale household units had not "heard" or were not aware of any government institutions for technical or financial assistance to such units, which mainly catered to the needs of larger units. A basic flaw in the provision of assistance by such institutions was that they were highly centralized and based in urban areas.

Adam (1993) finds nonfarm sources account for 41 percent of income of the poorest quintile in four districts in Pakistan (Table 3.11). The share of agricultural income accounts for a mere 21 percent, while livestock activities generate another 22 percent. The share of farm income in total rises, and nonfarm income falls, as income rises. The proportion of households deriving their income from wage employment, both agriculture and nonfarm work, declines with income. A breakdown by size of holding in Table 3.12 reveals the landless derive 47 percent of their income from nonfarm sources. This share declines substantially to 25 percent for those operating between 1 and 5 acres. Elahi and Khan (1986) also confirm this general trend in three districts of the Punjab.

Table 3.13 provides the five sources of nonfarm by income quintile group. It indicates the dependence of the poor on two particular sources of nonfarm income: self-employment (trading, artisan, and construction repair shops) and unskilled labor (miscellaneous activities including construction, etc.). Households in the lowest income quintile receive more than their quintile shares of nonfarm income-32.3 and 28.7 percent, respectively-from self-employment and unskilled labor.

Two income sources-nonfarm and livestock-represent inequality-decreasing sources of income. This means that additional increments of nonfarm or livestock income will serve to reduce overall income inequality. Nonfarm income makes a relatively small contribution to overall inequality. Nonfarm income accounts for between 6.5 and 24.1 percent of overall inequality.

Table 3.14 indicates three elements of decomposition of Gini coefficients: (1) source income weight; (2) source Gini (G); and (3) correlation ratio between source income and total inequality (R). Nonfarm income has the lowest source Gini in each of the three years and is thus the most equally distributed income source [row (2) of the table]. Row (3) reports the correlation ratios between source income and total income inequality and reveals that inequality in nonfarm income has a low degree of correlation with overall income inequality. Thus, despite the fact that it represents a large share of total income, nonfarm income makes a small contribution to income inequality because it has a low source Gini and is poorly correlated with overall income inequality.

Footnotes:

1 This section is mostly based on *Structural Adjustment in Developing Countries and Pakistan*, by William A. Byrd and Qadir, World Bank, September 1994; and by *Pakistan Consortium Report 1995*, World Bank.

2 To be meaning, such intertemporal comparisons of poverty need to keep the chosen poverty line constant in purchasing power across time. A good review of the literature can be found in *Poverty in Pakistan: 1984&shyp;85, 1987&shyp;88, and 1990&shyp;91* by Sohail J. Malik, International Food Policy Research Institute, 1994. For details, see *Recent Trends in Poverty in Pakistan*, by Haris Gazdar, Stephen Howes, and Salman Zaidi, August 1994. Also, World Bank, "Pakistan: Poverty Assessment." Country Department I, Asia Region, 1995.

3 Pakistan's Federal Bureau of Statistics has conducted a number of household income and expenditure surveys (HIESs), the earliest one in 1963/64. The most recent HIES for which data was available for this report was the 1990/91 HIES. There was also a Pakistan Integrated Household Survey conducted in 1991, which has more detailed information than the HIES on characteristics of household members, such as employment and level of education, and on ownership of assets. Estimates of income distribution from household surveys are notoriously unreliable, because of reporting problems with income. That is one reason why studies of poverty usually rely on household expenditure rather than income.

4 Harsha Aturupane, Paul Glewwe, and Paul Isenman, *Poverty, Human Development, and Growth: An Emerging Consensus*? HROWP 36, World Bank, August 1994.

5 The conclusion that poverty is higher in rural areas is very robust, as it holds for a wide range of possible poverty lines. For details, see *A Profile of Poverty in Pakistan: Some Insights from the Pakistan Integrated Household Survey 1991*, by Haris Gazdar, Stephen Howes, and Salman Zaidi. Washington, D.C.: World Bank, October 1994.

6 The poverty lines selected for this study were differentiated between not only between different provinces. Also, they were different for three years, i.e. 1984/85, 1987/88, and 1990/91. For example, for Pakistan as a whole, an aggregate monthly expenditure of Rs 185 per adult equivalent were required in 1984/85, Rs 241.11 in 1987/77, and Rs 320.42 for 1990/91 to meet the minimum calorie requirements of 2,550 calories of per adult equivalent per month. These poverty line expenditures rose by 8 percent between 1984/85 to 1987/88 and by 10 percent between 1987/88 and 1990/91. See Asian Development Bank, "Rural Poverty in Pakistan," unpublished manuscript, Manila, 1995.

7 S. M. Naseem, S. J. Malik, M. Mahmood, A. Melmood, N. Shrigi. "Rural Poverty in Pakistan: Issues and Policy Options. Paper prepared for the Asian Development Bank.

8 Per capita agricultural growth of 1 percent led to 1.5 percent income on per capita nonagricultural growth. Given per capita agricultural growth rate of 1.3 percent per year (1986&shyp;91). This led to 2 percent per capita growth rate in nonagricultural sector or 5 percent overall growth in nonagricultural, the wheat growth rate was 5.3 percent (World Bank 1994).

9 See H. Alavi, 1976, The Rural Elite and Agricultural Development in Pakistan, in *Rural Development in Bangladesh and Pakistan*, H. Stevens, H. Alavi, and P. Bertocci, eds. Hawaii: Hawaii University Press.

10 On the other hand, Hussain et al. (1992) observe from a recent survey of tenancy in Punjab and Sindh that tenancy reform did somewhat protect the rights of tenants. Such inferences are based on *ex post* data, which are better interpreted as tenancy reform improved the situation of those who remained tenants, rather than those who were evicted.

11 R. Amjad, 1971, Critique of the Green Revolution, *Pakistan Economic and Social Review*, May.

12 Reversing these policies would depress expected net profits of large farms. This, in turn, may prompt many larger landowners to sell their farms, inducing a decline in the market price of farm land. Poor households would then find it easier to purchase farm land. Such policy reforms have the potential for improving the distribution of farm land at no cost to taxpayers, and the reforms also make sense on efficiency grounds.

13 The ideal measure of employment would be person-days per annum, but such data are not available. Figures in Table 3.4 are in terms of numbers of persons employed per year.

14 Part of the reason for an increase in wages of casual workers may also have to do with the increasing mechanization that was occurring during the period. Tenancy reform made the hiring of permanent labor risky, lest they claim ownership to the land. Many farmers replaced permanent workers with casual help. They were also driven to increased use of tractors in order to keep labor supervision manageable. As casual labor is a complement of tractor use, increasing tractorization increased the demand and wages of this type of labor.

15 Interestingly for two years (1986/87 and 1989/90), the number of tractors ADBP claims to have financed exceeds the total number of tractors adopted in Pakistan, as reported by the Pakistan Economic Survey. One plausible explanation for the anomaly is that not all ADBP credit, meant on paper for LDAM, has been used for the purchase of such machinery.

16 E. Nabi et al., 1986, *The Agrarian Political Economy of Pakistan: Issues and Policies*. Oxford University Press.

17 N. Hamid, J. Nabi, and A. Nasim, 1990, Trade, Exchange Rate, and Agricultural Pricing Policies in Pakistan. Washington, D.C.: World Bank (Table 72C, p. 202).

18 For a discussion on Pakistan's manpower and employment problems, see Rashid Amjad, "Employment Implications of Development Policies for the 1990s," in *Financing Pakistan's Development in the 1990s*, Anjum Nasim, ed.. Karachi: OUP, 1992.

19 Labor Force Survey, 1991/92.

20 Khalid Nadvi, "Employment Creation in Urban Informal Micro Enterprises in the Manufacturing Sector in Pakistan," UNDP/ILO/ARTEP, Islamabad.